REMARKS/ARGUMENTS

Claim Rejections

The present application includes pending claims 1-33 and 36-50, all of which have been rejected. Claims 1, 12 and 23-33 have been amended, as set forth above, to further clarify the language used in the claims and to further prosecution of the present application. Claims 34-50 have been cancelled without prejudice. The Applicant respectfully submits that the claims define patentable subject matter.

Initially, the Applicant notes that a goal of patent examination is to provide a prompt and complete examination of a patent application:

> It is essential that patent applicants obtain a prompt yet complete examination of their applications. Under the principles of compact prosecution, each claim should be reviewed for compliance with every statutory requirement for patentability in the *initial review* of the application, even if one or more claims are found to be deficient with respect to some statutory requirement. Thus, Office personnel *should* state *all* reasons and bases for rejecting claims in the *first* Office action. Deficiencies should be explained clearly, particularly when they serve as a basis for a rejection. Whenever practicable, Office personnel should indicate how rejections may be overcome and how problems may be resolved. A failure to follow this approach can lead to unnecessary delays in the prosecution of the application. Manual of Patent Examining Procedure (MPEP) § 2106(II).

As such, the Applicant assumes, based on the goals of patent examination noted above, that the present Office Action has set forth "all reasons and bases" for rejecting the claims.

The claims 1-7 12-18 and 23-29 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hurley et al. (U.S. Patent 6,891,909, hereinafter Hurley) in view of Shinoda (JP-20040007145) and Todd (U.S. Patent 6,118,773). Claims 8, 19 and 30 have been rejected under 35 U.S.C. § 103(a) as being as being unpatentable over Hurley in view of Shinoda and Todd and further in view of Tehrani et al. (U.S. Patent Application 2002/0164,963, hereinafter Tehrani). Claims 9-11, 20-22 and 31-33

have been rejected under 35 U.S.C. § 103(a) as being as being unpatentable over Hurley in view of Todd and further in view of Adams et al. (U.S. Patent Publication 2007/0129,034, hereinafter¹ Adams). Claims 36-38, 41-43 and 46-48 have been rejected under 35 U.S.C. § 102(e) as being as being anticipated by Hurley. Claims 39-40, 44-45 and 49-50 have been rejected under 35 U.S.C. § 103(a) as being as being unpatentable over Hurley in view of Usuda et al. (U.S. Patent Publication 2006/0062186, hereinafter Usuda). The Applicant respectfully traverses these rejections and requests reconsideration of the claims in view of the following remarks.

Claim Rejections under 35 U.S.C. § 103(a)

Rejection of claims 1-7, 12-18 and 23-29 under 35 U.S.C. § 103(a)

The Office Action asserts that the claims 1-7, 12-18 and 23-29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hurley in view of Shinoda and Todd. Claims 1, 12 and 23 are independent claims.

Rejection of claims 1, 12 and 23

The Applicant first turns to the rejection of independent claims 1, 12 and 23 as being unpatentable over Hurley in view of Shinoda and Todd under 35 U.S.C. § 103(a). The combination of Hurley, Shinoda and Todd does not teach "determining a selection index value for each one of said portion of said plurality of antennas wherein each said selection index values indicates a number of instances that a corresponding one of said each one of said portion of said plurality of antennas is selected as said receiving antenna over a determined number of said received plurality of frames" and "selecting one or more candidate starting antennas by comparing each of said plurality of selection index values to a majority polling threshold value" as is recited in independent claim 1.

Hurley discloses a transmitter that transmits ECG data at a rate of 120 samples per second. Each sample is transmitted in a single packet utilizing a protocol that specifies 125 packets per second. Thus, the protocol provides for transmission of 5

"blank packets" out of every 125 packets. *See* Hurley col. 3, lines 49-60. The blank packets are transmitted consecutively as a burst of 5 blank packets every second. During the time interval in which the blank packets are received antenna power level testing is performed. *See* Hurley, col. 4, lines 17-23.

Hurley teaches that a power level is computed individually for each antenna. Specifically, Hurley teaches a "digital signal processor 42 is programmed to calculate the relative power for each antenna field" (Hurley, col. 7, lines 18-20). Hurley discloses a method for power level computation in which an antenna field switch 26 selects a receiving antenna from which a measured signal is to be received (Hurley, col. 7, lines 21-22). For each sample from the received signal a power level is measured. The power levels for samples received over a 10-bit long time interval are summed and a scaled value of the sum computed (Hurley, col. 7, lines 38-49). The process of sampling, power level measurement, summing and scaling is repeated four times, with the result of each iteration added to the sum of preceding iterations (Hurley, col. 7, lines 50-51). The process of sampling, power level measurement, summing, scaling and repetition is repeated for each antenna (Hurley, col. 7, lines 55-57). Hurley also discloses that "the number of repetitions need not be equal to four, but needs to be the same for each antenna field because the measurement is relative, not absolute" (Hurley, col. 7, lines 51-54).

In other words, Hurley teaches that for any power level measurement, each antenna is selected an equal number of times and that the number of samples from which the power level is computed is equal for each antenna. Thus, the Applicant submits that Hurley teaches no distinction among the antennas based on the number of times that a given antenna is selected. Consequently, Hurley does not teach, suggest or disclose "determining a selection index value for each one of said portion of said plurality of antennas wherein each said selection index values indicates a number of instances that a corresponding one of said each one of said portion of said plurality of antennas is selected as said receiving antenna over a determined number of said received plurality of frames," as is recited in independent claim 1 (emphasis added). Instead, Hurley teaches that, for each antenna, a weighted average of the power levels

is calculated over a three second time interval with antenna selection determined based on the antenna "with the highest weighted average" (Hurley, col. 7, lines 55-65).

The Examiner concedes that "Hurley fails to teach the selection value." *See* Office Action, page 6.

Shinoda discloses an antenna change-over switch 103 that chooses either of two antennas 101 or 102 (Shinoda, paragraph [0015]). A receiving circuit 107 receives a signal from the selected antenna and computes an index value V (Shinoda, paragraph [0016]). The index value V may be based on a "receiving field intensity of a received signal, an AGC gain value, an error rate, etc." (Shinoda, paragraph [0016]). The index value V is compared to a stored threshold value A. An antenna change signal 207 may be generated based on the comparison (Shinoda, paragraph [0021]).

The Applicant submits that the index value V, as disclosed in Shinoda, is not computed based on the number of times that either antenna 101 or 102 is selected by the antenna change-over switch 103. Consequently, neither Hurley, Shinoda, nor any combination of Hurley and Shinoda teach "determining a selection index value for each one of said portion of said plurality of antennas wherein each said selection index values indicates a number of instances that a corresponding one of said each one of said portion of said plurality of antennas is selected as said receiving antenna over a determined number of said received plurality of frames," as is recited in independent claim 1 (emphasis added).

Furthermore, Shinoda merely teaches comparing a single computed index value V to a stored threshold value A. Thus, Shinoda does not teach, suggest or disclose that the stored threshold value A is "a majority polling threshold value," as is recited in independent claim 1. Nor, by implication, does Shinoda teach, suggest or disclose that the index value V is determined by majority polling. Consequently, Shinoda does not teach "selecting one or more candidate starting antennas by comparing each of said plurality of selection index values to a majority polling threshold value," as is recited in independent claim 1 (emphasis added). In the Office Action, the Examiner did not assert that Hurley teaches "selecting one or more candidate starting antennas by

comparing each of said plurality of selection index values to a majority polling threshold value," as is recited in independent claim 1. The Applicant respectfully submits that neither Hurley, Shinoda, nor any combination of Hurley and Shinoda teach "selecting one or more candidate starting antennas by <u>comparing each of said plurality of selection index values to a majority polling threshold value</u>," as is recited in independent claim 1 (emphasis added).

The Examiner concedes that "Hurley, Shinoda fail to teach the selecting one or more candidate starting antennas by comparing values to a majority threshold value." *See* Office Action, page 6.

Todd discloses a diversity selection process in a fixed wireless access terminal, which selects an antenna based on RSSI and BER (Todd FIG. 1 and col. 6, lines 58-63). A BEST antenna is selected for data reception (Todd col. 6, lines 63-65). The BER is measured and compared to a threshold value (Todd FIG. 4b, 440). Based on the comparison a variable "Hysteresis Cnt" may be incremented (Todd FIG. 4b, 446 and col. 8, lines 15-17). The Hysteresis Cnt value is compared to a threshold value M (Todd FIG. 4b 449 and col. 8, lines 17-18). Based on the comparison, the selection process may either determine whether co-channel interference (CCI) exists (Todd FIG. 4b, 452 and col. 8, lines 25-32) or whether the current antenna is to be maintained as a result of a recent CCI-based switch (Todd FIG. 4b, 455 and col. 9, lines 1-4). In other words, Todd teaches that based on a comparison between the Hysteresis Cnt value and the threshold value M, a decision is made as to whether to determine whether CCI exists, or whether to inhibit an antenna switch based on a recent occurrence of an antenna switch. Todd does not teach, suggest or disclose that an antenna selection decision is actually made based on the comparison between the Hysteresis Cnt value and the threshold value M. Consequently, the Applicant respectfully submits that Todd does not teach "<u>selecting</u> one or more candidate starting antennas by comparing each of said plurality of selection index values to a majority polling threshold value," as is recited in independent claim 1. Thus, since the Examiner has conceded that "Hurley, Shinoda fail to teach the selecting one or more candidate starting antennas by comparing values to a majority threshold value," the Applicant respectfully submits that

neither Hurley, Shinoda, Todd nor any combination of Hurley, Shinoda and Todd teaches "selecting one or more candidate starting antennas by comparing each of said plurality of selection index values to a majority polling threshold value," as is recited in independent claim 1 (emphasis added).

Furthermore, the Applicant respectfully submits that Todd does not teach majority polling. In the Office Action, the Examiner asserts: "

> Todd teaches the selecting one or more candidate antennas by comparing values to a majority polling threshold value [comparing threshold 20, & increment hysteresis count step 440, & comparing hysteresis count with M, for the majority polling in FIG. 4b & its description in the specification], in order to reliably select one antenna with threshold & hysteresis count. See Office Action, pages 6-7.

The Applicant respectfully disagrees with the Examiner's assertions. The Applicant respectfully submits that the Hysteresis Cnt disclosed in Todd is not based on majority polling. The Applicant submits that the concept of "majority polling" must bear some connection to a "majority." However, according to the commonly understood meaning for the word "majority":

> **majority** *n* **3 a**: a number or percentage equaling more than half of a total **b:** the excess of a majority over the remainder of the total : MARGIN **c:** the greater quantity or share (Merriam-Webster's Collegiate Dictionary, 11th Edition, 2003).

the word "majority" is used within the context of a "greater quantity" or "share" of some "total". The Applicant respectfully submits that based on the definition of "majority", majority polling refers to counting the occurrence of distinct outcomes, which may occur in a common population. Counting the number of occurrences in which a coin toss results in "heads" or results in "tails" is an exemplary model in which distinct outcomes can be measured in a majority poll. In this exemplary model, the number of coin tosses would be the total and majority poll would attempt to determine whether the number of occurrences of heads is greater than, less than or equal to the number of occurrences of tails. However, the Hysteresis Cnt, as disclosed in Todd is merely a single count variable. However, Todd does not teach, suggest or disclose that the Hysteresis Cnt is

related to any "greater quantity," "share" or "total". The purpose of comparison of the Hysteresis Cnt to the threshold value M, is merely to determine whether the Hysteresis Cnt value is greater than the value of the hysteresis parameter M. Thus, the Applicant can find no support for the assertion that the Hysteresis Cnt is based on majority polling. Nor can the Applicant find support for an assertion that the threshold value M is a "majority polling threshold value," as is recited in independent claim 1.

The Applicant respectfully submits that Todd merely discloses "'M' is a hysteresis parameter (M=7 for BER hysteresis and M=0 for RSSI based switching. M=7 is chosen for BER to ensure interferer persists and is not spurious. 0<M<255)" and "'Hysteresis Cnt' is a variable used as a counter." Neither of these definitions teach, suggest nor disclose any relationship to majority polling. Consequently, the Applicant respectfully submits that Todd does not teach, suggest or disclose "selecting one or more candidate starting antennas by comparing each of said plurality of selection index values to a majority polling threshold value," as is recited in independent claim 1 (emphasis added). Furthermore, the Applicant respectfully submits that neither Hurley, Shinoda, Todd nor any combination of Hurley, Shinoda and Todd teaches "selecting one or more candidate starting antennas by comparing each of said plurality of selection index values to a majority polling threshold value," as is recited in independent claim 1 (emphasis added).

For at least the reasons stated above, the Applicant respectfully submits that independent claim 1 is not unpatentable over Hurley in view of Shinoda and Todd under 35 U.S.C. § 103(a). The Applicant also submits that independent claims 12 and 23 are not unpatentable over Hurley in view of Shinoda and Todd under 35 U.S.C. § 103(a) based on a substantially similar rationale. The Applicant respectfully requests that the rejection of these claims be withdrawn. Additionally, since the dependent claims 2-11 depend from independent claim 1, dependent claims 13-22 depend from independent claim 12 and claims 24-33 depend on the independent claim 23, the Applicant respectfully requests that the rejection of these claims also be withdrawn. The Applicant expressly reserves the right to argue additional reasons that support the allowability of claims 1-33 should that need arise in the future.

Rejection of claims 8, 19 and 30

Claims 8, 19 and 30 have been rejected as being unpatentable over Hurley in view of Shinoda and Todd and further in view of Tehrani under 35 U.S.C. § 103(a). For at least the reasons stated above, the Applicant respectfully submits that independent claims 1, 12 and 23 are not unpatentable over Hurley in view of Shinoda and Todd under 35 U.S.C. § 103(a). Since the dependent claim 8 depends from independent claim 1, dependent claim 19 depends from independent claim 12 and dependent claim 30 depends on the independent claim 23, the Applicant respectfully requests that the rejection of these claims also be withdrawn.

The Applicant expressly reserves the right to argue additional reasons that support the allowability of claims 8, 19 and 30 should that need arise in the future.

Rejection of claims 9-11, 20-22 and 31-33

Claims 9-11, 20-22 and 31-33 have been rejected as being unpatentable over Hurley in view of Shinoda and Todd and further in view of Adams under 35 U.S.C. § 103(a). For at least the reasons stated above, the Applicant respectfully submits that independent claims 1, 12 and 23 are not unpatentable over Hurley in view of Shinoda and Todd under 35 U.S.C. § 103(a). Since the dependent claims 9-11 depends from independent claim 1, dependent claims 20-22 depends from independent claim 12 and dependent claims 31-33 depends on the independent claim 23, the Applicant respectfully requests that the rejection of these claims also be withdrawn.

The Applicant expressly reserves the right to argue additional reasons that support the allowability of claims 9-11, 20-22 and 31-33 should that need arise in the future.

Rejection of claims 39-40, 44-45 and 49-50 under 35 U.S.C. § 103(a)

The Office Action asserts that the claims 39-40, 44-45 and 49-50 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hurley in view of Usuda. Claims 39-40, 44-45 and 49-50 have been cancelled without prejudice.

Claim Rejections under 35 U.S.C. § 102(e)

Rejection of claims 36-38, 41-43 and 46-48 under 35 U.S.C. § 102(e)

The Office Action asserts that the claims 36-38, 41-43 and 46-48 are rejected under 35 U.S.C. § 102(e) as being anticipated by Hurley. Claims 36-38, 41-43 and 46-48 have been cancelled without prejudice.

CONCLUSION

Based on at least the foregoing, Applicant believes that all claims 1-33 are in condition for allowance. If the Examiner disagrees, Applicant respectfully requests a phone interview, and requests that the Examiner telephone the undersigned at 312-775-8072.

Applicant expressly reserves the right to argue additional reasons that support the allowability of claims 1-33 should that need arise in the future.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

A Notice of Allowability is courteously requested.

Respectfully submitted,

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